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DORITY & MANNING, P.A.
POST OFFICE BOX 1449
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EXAMINER	
LE, NINH V	

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1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,894	PAPKE ET AL.	
	Examiner	Art Unit	
	Ninh V. Le	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 15-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a final Office action in response to a non-final Office action on 3/5/09.

Election/Restrictions

Applicant's election without traverse of group I, claims 1-11 and 15-17 in the reply filed on 7/6/09 is acknowledged.

Claims 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/6/09.

Specification

The objection to the disclosure has been withdrawn due to applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5, 7-11, 15,17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glemet et al. US Patent 4937028 (hereinafter Glemet '028) (already of record) in view of Winckler et al. US Patent 6369157B1 (hereinafter Winckler '157) in further view of Sharma et al. US Patent 6090319 (hereinafter Sharma '319) (already of record).

Regarding claim 1, Glemet '028 discloses a process for production of long fiber-reinforced molding compositions *(process for producing thermoplastic resins reinforced with long fibers, Column 1 Line 7-8)* encompassing the steps of:

a) passing, over a surface, at least one multifilament strand of multifilaments subject to tension, so that in the at least one strand the multifilaments spread apart and form an opened multifilament strand *(having passed through at least one baffle of a bar…applies a force perpendicular to width of the rovings…causes spreading of the fibers, Column 2 Line 15-17)*,

b) introducing the opened multifilament strand subject to tension *(as stated in the aforementioned rejection in claim 1(a))* into a first impregnator *(rovings are introduced into the die for impregnation, Column 2 Line 12-13)*,

c) conducting a first thermoplastic molding composition into the first impregnator, where the first thermoplastic molding composition comprises at least one thermoplastic polymer *(impregnated with wetting thermoplastic resin, Column 2 Line 18-19)*, optionally comprises other additives which do not adversely affect the activity of the catalyst, the formation of covalent bonds between the thermoplastic polymer and the multifilaments, the covalent bonds linking the thermoplastic polymer to the surface of the multifilaments in the first impregnator *(Note, the wetting thermoplastic polymer which acts as a coupling agent makes it possible to increase the bond between the surface fiber and coating polymer (Column 3 Line 55-58) and therefore it is the Examiner's position that covalent bonds exist between the coating polymer and the surface of the multifilaments exist as a result of this coupling agent)*.

d) impregnating the at least one opened multifilament strand with the plastified first thermoplastic molding composition *(fed with molten wetting thermoplastic polymer after having passed through at least one baffle of a bar or baffle zone which...causes spreading of the fibers, Column 2 Line 11-17)*,

e) drawing-off of the fiber-reinforced strand formed from the first impregnator *(sheet or strip…impregnated with wetting thermoplastic resin and drawn, Column 2 Line 17-19)*,

f) passing the fiber-reinforced strand into a second die *(wetting resin impregnated fibers…entering the second die, Column 2 Line 19-20)*,

g) conducting a second thermoplastic molding composition, other than the first thermoplastic molding composition and comprising at least one thermoplastic polymer *(polypropylene, Column 5 Line 56; note: this propylene is different from the first*

thermoplastic molding composition which is polypropylene grafted with maleic anhydride, Column 4 Line 59-60)

h) sheathing the fiber-reinforced strand with the plastified second thermoplastic molding composition in the second die *(wetting resin impregnated fibers…entering the second die fed with coating resin, Column 2 Line 65-67)*,

i) drawing-off of the fiber-reinforced strand provided with a sheath composed of the second thermoplastic molding composition from the second die *(second die…from orifices of 4mm diameter of the die, were drawn reed, Column 5 Line 53-60)*, and

j) optionally cooling *(drawn reeds…which were then cooled, Column 5 Line 60-61)*, molding, pelletizing and/or further processing of the fiber-reinforced strand provided with a sheath composed of the second thermoplastic molding composition.

Note, Glemet '028 discloses that the fiber impregnated with the wetting thermoplastic resin is heated above 40°C the melting temperature of the wetting resin and then fed with the thermoplastic resin (Column 2 Line 46-55) and the second thermoplastic molding composition which is polypropylene at 230°C was fed into a second die maintained at 210°C (Column 5 Line 53-57). Therefore, it is considered that the first and second thermoplastic molding compositions are plastified at these operating temperatures.

However, Glemet '028 failed to teach at least one catalyst wherein the at least one catalyst catalyzes the formation of covalent bonds between the thermoplastic polymer and the multifilaments and additives added into the second die.

In the same field of endeavor, Winckler '157 discloses in regard to claim

1(c), at least one catalyst wherein the at least one catalyst catalyzes *(pulling a fibrous strand into an elongated die, moving the macrocyclic polyester obligomer and the polymerization catalyst…into the die therby causing contact with and around the fibrous strand, heating to cause polymerization of the macrocyclic polyester obligomer forming high molecular weight polyester resin matrix around the fibrous strand, Column 17 Line 64-67 and Column 18 Line 2-4)* the formation of covalent bonds between the thermoplastic polymer and the multifilaments *(as stated in the aforementioned rejection in claim 1).*

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching of Glemet '028 with that of Winckler '157 by combining the process of manufacturing a long fiber-reinforced composition utilizing the thermoplastic polymer as disclosed by Glemet '028 with the use of a catalyst as disclosed by Winckler '157 for the benefit of optimizing the process of catalyzing the polymerization of the macrocyclic polyester obligomer (Winckler '157, Column 5 Line 64-67). In addition, the "ready-to-use" one component of the macrocyclic polyester obligomer and polyesterization catalyst disclosed by Winckler '157 avoids the need for equipment modification thereby reducing time and cost of manufacture while expanding the application of macrocyclic polyester obligomer (Winckler '157, Column 1 Line 58-64). During this process, the formation of the covalent bond as disclosed by Glemet '028 would also be catalyzed.

However, the hypothetical teaching combination of Glemet '028 and Winkler '157 failed to teach additives added into the second die.

In the same field of endeavor, Sharma '319 discloses in regard to claim 1(g), additives added into the second die *(coating die 15…second thermoplastic resin material and an additive material, Column 4 Line 46-48)*.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hypothetical teaching combination of Glemet '028 and Winkler '157 with that of Sharma '319 by combining the process of manufacturing a long fiber-reinforced composition utilizing the thermoplastic polymer and a catalyst as disclosed by the hypothetical teaching of Glemet '028 and Winkler '157 with the addition of an additive material in the second die as disclosed by Sharma '319 for the benefit of optimizing the molding properties as well as physical and chemical properties of shaped articles (Sharma '319, Column 5 Line 60-62).

Regarding claim 2, Glemet '028 discloses wherein a plurality of opened multifilament strands, are introduced into the first impregnator *(prior to passing into the impregnation die, are expanded so as to spread out substantially side by side each one of the fibers of the roving, Column 2 Line 6-9)*.

Regarding claim 3, Glemet '028 discloses wherein the fiber-reinforced strand provided with a sheath composed of the second thermoplastic molding composition is cooled *(as stated in the aforementioned rejection in claim 1(j))*, molded, chopped into pellets, and/or further processed after leaving the second die.
Note, sheathing occurred during the resin coating in the second die or coating die (Column 2 Line 65-67).

Regarding claim 4, Glemet '028 discloses wherein the first thermoplastic molding composition is substantially composed of at least one thermoplastic polymer *(impregnated with wetting thermoplastic resin, Column 2 Line 18-19)*, and, optionally of at least one antioxidant, and wherein the proportion of the multifilaments is from 10 to 80% by weight, based on the weight of the fiber- reinforced rod leaving the first impregnator *(the continuous fibers impregnated…wetting resin…70 to about 75% by weight of fibers, Column 3 Line 14-16)*.

Note, it is the Examiner's position that impregnation of the rovings with the wetting thermoplastic resin (Column 2 Line 12-19) causes the fiber strands to be reinforced. Also, Glemet '028 discloses that reeds of 4mm diameter were made from the first die. Therefore, the fiber leaving the first impregnator is a fiber-reinforced rod.

Regarding claim 4, Glemet '028 failed to teach wherein the first thermoplastic molding composition is substantially composed of at least one catalyst.

Regarding claim 4, Winckler '157 discloses wherein the first thermoplastic molding composition is substantially composed of at least one catalyst *(pulling a fibrous strand into an elongated die, moving the macrocyclic polyester obligomer and the polymerization catalyst, Column 17 Line 64-66)*,

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching of Glemet '028 with that of Winkler '157 by combing the process of manufacturing a long fiber-reinforced composition utilizing the thermoplastic polymer as disclosed by Glemet '028 with the

catalyst as disclosed by Winkler '157 for the benefit of optimizing the process of catalyzing the polymerization of the macrocyclic polyester obligomer (Winckler '157, Column 5 Line 64-67). In addition, the "ready-to-use" one component of the macrocyclic polyester obligomer and polyesterization catalyst disclosed by Winckler '157 avoids the need for equipment modification thereby reducing time and cost of manufacture while expanding the application of macrocyclic polyester obligomer (Winckler '157, Column 1 Line 58-64).

Regarding claims 5,7, and 11, Winckler '157 discloses wherein the catalyst in the first molding composition is a catalyst which catalyzes transesterification *(Polymerization catalysts include...tin compounds, Column 2 Line 12-14; note: tin compounds are transesterification catalyst, Column 5 Line 51)*, transamidation, or transurethanization reactions, or which catalyzes the formation of ester groups, amide groups, or urethane groups and wherein the catalyst in the first molding composition is selected from the group consisting of phosphonium salts, phosphanes, ammonium salts, sulfonium salts, titanates *(tetra(2-ethylhexyl) titanate, tetraisopropyl titanate, tetrabutyl titanate, titanate compound…used as polymerization catalyst, Column 6 Line 45-48)*, titanyl compounds, zirconates, and mixtures of these and ethyltriphenylphosphonium bromide, tetraphenylphosphonium bromide, tetrabutylphosphonium bromide, stearyltributylphosphonium bromide, triphenylphosphane, n-butyl titanate *(tetrabutyl titanate, Column 6 Line 46)*, and mixtures of these.

Regarding claim 8, Sharma '319 discloses wherein the additive in the

second molding composition is selected from the group consisting of mineral fillers *(calcium carbonate,silica, mica, clays, talc, calcium silicate, graphite, wollastonite, calcium silicate, alumina trihydrate, barium ferrite, Column 6 Line 13-16)*, colorants *(pigments, Column 5 Line 66-67)*, antistatic agents, lubricants *(lubricants, Column 6 Line 10)*, tribological auxiliaries, antioxidants, UV stabilizers *(ultraviolet light resistant agents, Column 6 Line 11-12)*, acid scavengers, coupling agents, mold-release agents, nucleating agents, ultrahigh-molecular-weight polyethylene, impact modifiers, elastomers, and mixtures thereof.

Regarding claim 9, Sharma '319 discloses wherein, in the second molding composition, additives are used which are present in a separate phase in the polymer matrix *(clays, Column 6 Line 14).*

The clay as disclosed by Sharma '319 exists in a solid state which is a different phase from the liquid state polypropylene as disclosed by Glemet '028 as stated in the aforementioned rejection in claim 1(g).

Regarding claims 10 and 17, Glemet '028 discloses wherein the thermoplastic polymer for the first molding composition and/or the second molding composition is selected from the group consisting of polyolefin, polyacrylate, polymethacrylate, polymers obtainable by polymerizing esters and/or amides of acrylic acid or methacrylic acid *(polypropylene grafted with maleic anhydride or acrylic acid, Column 4 Line 33-34)*, copolymers of these, polyamides *(polyamide, Column 4 Line 5)*, polyesters, polycarbonate, polyethers, polythioethers, polyacetals, polyphenylene oxides,

polyarylene sulfides, and mixtures of these and polypropylene *(polypropylene, Column 4 Line 5)*, polyethylene *(polyethylene, Column 4 Line 27)*, a modified polyolefin.

Regarding claim 15, Glemet '028 discloses wherein from one to a hundred of opened multifilament strands are introduced into the first impregnator *(as stated in the aforementioned rejection in claim 2)*.

Glemet '028 and the claims differ in that Glemet '028 does not teach the exact same proportion of one to a hundred as recited in the instant claim.

However, one of ordinary skill in the art at the time the invention was made would have been considered the invention to have been obvious because the compositional proportions taught by Glemet '028 overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Regarding claim 18, Glemet '028 discloses wherein the covalent bonds linking the thermoplastic polymer to the surface of the multifilaments are formed via a reaction of reactive groups of the thermoplastic polymer with reactive groups on the surface of the multifilaments or utilizing a coupling agent *("wetting thermoplastic polymer"…a*

polymer that makes it possible to increase the bond between the surface fiber and coating polymer, thus playing the part of a coupling agent, Column 3 Line 55-58; note: it is the Examiner's position that covalent bonds between the coating polymer and the surface of the multifilaments exist as a result of the wetting thermoplastic polymer which acts as a coupling agent).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glemet et al. US Patent 4937028 (hereinafter Glemet '028) (already of record) in view of Winckler et al. US Patent 6369157B1 (hereinafter Winckler '157) in further view of Sharma et al. US Patent 6090319 (hereinafter Sharma '319) (already of record) and in further view of Chung et al. US Patent 4588538 (hereinafter Chung '538).

From the aforementioned rejection, the hypothetical combination of Glemet '028, Winckler '157, and Sharma '319 teaches all of the limitation of claim 1 as it applies to the dependent claim 6.

However, the hypothetical combination of Glemet '028, Winckler '157, and Sharma '319 failed to teach wherein the catalyst in the first molding composition is a Lewis acid.

In the same field of endeavor, Chung '538 discloses in regard to claim 6, wherein the catalyst in the first molding composition is a Lewis acid *(representative catalysts…Lewis acids, Column 8 Line 15-23)*.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hypothetical teaching combination of Glemet '028, Winckler '157, and Sharma '319 with that of Chung '538 by combining the process of manufacturing a long fiber-reinforced composition utilizing a thermoplastic polymer, a catalyst, and an additive material as disclosed by the hypothetical teaching combination of Glemet '028, Winckler '157, and Sharma '319 with the Lewis acid catalysts as disclosed by Chung '538 for the benefit of optimizing the catalytic polymerization of a polymer.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glemet et al. US Patent 4937028 (hereinafter Glemet '028) (already of record) in view of Winckler et al. US Patent 6369157B1 (hereinafter Winckler '157) in further view of Sharma et al. US Patent 6090319 (hereinafter Sharma '319) (already of record) and in further view of Evans US Patent 5709933 (hereinafter Evans '933).

From the aforementioned rejection, the hypothetical combination of Glemet '028, Winckler '157, and Sharma '319 teaches all of the limitation of claim 1 as it applies to the dependent claim 16.

However, the the hypothetical combination of Glemet '028, Winckler '157, and Sharma '319 failed to teach wherein the additive in the second molding composition is elastomer.

In the same field of endeavor, Evans '933 discloses in regard to claim 16, wherein the additive in the second molding composition is elastomer (melting EPDM rubber into polyethylene, Column 4 Line 54).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hypothetical teaching combination of Glemet '028, Winckler '157, and Sharma '319 with that of Evans '933 by combing the process of manufacturing a long fiber-reinforced composition utilizing thermoplastic polymer, a catalyst, and an additive material as disclosed by the hypothetical teaching combination of Glemet '028, Winckler '157, and Sharma '319 with the EPDM rubber as disclosed by Evans '933 for the benefit of maximizing the coupling between the thermoplastic polymer and the fibers (Evans '933, Column 4 Line 54-55).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glemet et al. US Patent 4937028 (hereinafter Glemet '028) (already of record) in view of Winckler et al. US Patent 6369157B1 (hereinafter Winckler '157) in further view of Sharma et al. US Patent 6090319 (hereinafter Sharma '319) (already of record) as applied to claim 1 and as taught by Imashiro et al. US Patent 6214940 (hereinafter Imashiro '940).

. **Regarding claim 19, the hypothetical teaching combination of Glemet '028 and Winkler '157 failed to teach** wherein the first thermoplastic molding composition comprises polyoxymethylene homo or copolymer.

Regarding claim 19, Sharma '319 discloses wherein the first thermoplastic molding composition comprises polyoxymethylene homo or copolymer *(first thermoplastic resin…polyacetals, Column 5 Line 18-20; note: polyacetal resin is commonly known as polyoxymethylene homopolymer or a copolymer as taught by Imashiro '940 (Column 2 Line 5-8))*.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hypothetical teaching combination of Glemet '028 and Winkler '157 with that of Sharma '319 by combining the process of manufacturing a long fiber-reinforced composition utilizing the thermoplastic polymer and a catalyst as disclosed by the hypothetical teaching of Glemet '028 and Winkler '157 with a first thermoplastic molding composition comprising of polyoxymethylene as disclosed by Sharma '319 for the benefit of optimizing the molding properties as well as physical and chemical properties of shaped articles (Sharma '319, Column 5 Line 60-62).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glemet et al. US Patent 4937028 (hereinafter Glemet '028) (already of record) in view of Winckler et al. US Patent 6369157B1 (hereinafter Winckler '157) in further view of

Sharma et al. US Patent 6090319 (hereinafter Sharma '319) (already of record) in further view of Bernd et al. PGPub Publication US2003/0096898A1 (hereinafter Bernd '898).

From the aforementioned rejection, the hypothetical teaching combination of Glemet '028, Winckler '157, and Sharma '319 teaches all of claim 1 as it relates to dependent claim 20.

Regarding claim 20, Winckler '157 discloses wherein the first thermoplastic molding composition comprises a catalyst of a certain mole percentage *(the amount of polymerization catalyst…about 0.2 to about 0.6 mole percent based on total moles of monomer repeat units of the macrocyclic polyester obligomer, Column 11 Line 9-14).*

Glemet '028 discloses the claimed invention except for a catalyst from 0.00001% to 0.5% by weight. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the catalyst from 0.00001% to 0.5% by weight for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

However, Winckler '157 failed to teach an antioxidant additive from 0.01% to 1.0% by weight.

In an art relating to long-fiber reinforced polyolefin structures, Bernd '898 discloses an antioxidant additive from 0.01% to 1.0% by weight *(amount of antioxidant…from 0.2 to 2.0% by weight, Paragraph [0113])*.

Winkler ‘157 discloses the claimed invention except for an antioxidant additive from 0.01% to 1.0% by weight. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the antioxidant additive from 0.01% to 1.0% by weight for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hypothetical teaching combination of Glemet ‘028, Winckler ‘157, and Sharma ‘319 with that of Bernd ‘898 by combing the process of manufacturing a long fiber-reinforced composition utilizing thermoplastic polymer, a catalyst, and an additive material as disclosed by the hypothetical teaching combination of Glemet ‘028, Winckler ‘157, and Sharma ‘319 with an antioxidant additive as disclosed by Bernd ‘898 for the benefit of providing a long fiber-reinforced polyolefin structure with very good mechanical properties, good heat resistance, low water absorption, and low warpage thereby obtaining a product that have improved dimensioning and improve precision of fit (Bernd ‘898, Paragraph [0017]).

Response to Arguments

Applicant's arguments filed 7/6/09 have been fully considered but they are not persuasive.

Regarding amended claim 1, applicant argued that Winkler failed to disclose any motivation or suggestion to utilize a combination of fibers, thermoplastic, and catalyst which form covalent bonds linking the thermoplastic polymer to the surface of the of the multifilaments. Additionally, applicant alleged that Winkler simply discloses a one step process in which the catalyst is utilized to form the thermoplastic polymer around the fiber instead of using the catalyst during the impregnation step.

The Examiner respectfully disagrees. As stated above in the aforementioned rejection, covalent bonds are formed between the coating polymer and the surface of the fiber due to the wetting thermoplastic polymer which acts as a coupling agent (Column 3 Line 55-58) during the impregnation step (Column 2 Line 13-17) of Glemet process. Winkler on the other hand, discloses using a polymerization catalyst with a fibrous strand and a macrocyclic polyester obligomer. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching of Glemet '028 with that of Winckler '157 by combining the process of manufacturing a long fiber-reinforced composition utilizing the thermoplastic polymer as disclosed by Glemet '028 with the use of a catalyst as disclosed by Winckler '157 for the benefit of optimizing the process of catalyzing the polymerization of the macrocyclic polyester obligomer (Winckler '157, Column 5 Line 64-67). In addition, the "ready-to-use" one component of the macrocyclic polyester obligomer and polyesterization catalyst disclosed by Winckler '157 avoids the need for equipment modification thereby reducing time and cost of manufacture while expanding the application of macrocyclic polyester obligomer (Winckler '157, Column 1 Line 58-64). During this process, the

formation of the covalent bond as disclosed by Glemet '028 would also be catalyzed. The Examiner would also like to note that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding claim 5, applicant argued that Winkler failed to disclose a catalyst that catalyzes a transesterification reaction between the fibers and thermoplastic because the disclosed transesterification catalyst disclosed by Winkler is used for forming the macrocyclic polyester obligomers to be utilized in the blend.

The Examiner respectfully disagrees. As stated in the above rejection, a transesterification catalyst such as a tin compound (Column 5 Line 51-52) could be used as a polymerization catalyst (Column 2 Line 12-14) which is utilized during the polymerization step (Column 17 Line 60-67 and Column 18 Line 1-4).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ninh V. Le whose telephone number is (571)270-3828. The examiner can normally be reached on Monday - Friday 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NVL

/Joseph S. Del Sole/

Supervisory Patent Examiner, Art Unit 1791